THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today
(1) was not written for publication in a law journal and
(2) is not binding precedent of the Board.

Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte CLAUDE C. SCHAUBER

Appeal No. 1997-0433
Application 08/230,582

ON BRIEF

Before JOHN D. SMITH, WARREN and WALTZ, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

Decision on Appeal

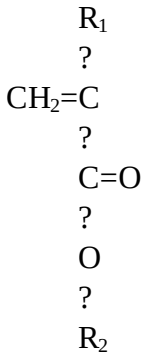
This is an appeal under 35 U.S.C. § 134 from the decision of the examiner refusing to allow claims 1 and 4 through 10, all of the claims remaining in the application, as amended subsequent to the final rejection, in which amendment claims 2 and 3 were cancelled.[1] Claim 1 and 8 are illustrative of the claims on appeal:

1. A method for making a viscosity index improving copolymer solution, comprising:

[1] Amendment of February 20, 1996 (Paper No. 14). While the examiner indicated in the advisory action of March 8, 1996 (Paper No. 15) that the amendment would be entered upon the filing of an appeal, and appropriately so marked the amendment, the same has not been clerically entered.

polymerizing a monomer mixture in an oil soluble diluent and in the presence of a polymerization initiator to form a polymerization intermediate, said monomer mixture comprising:

from about 5 parts by weight to about 70 parts by weight of a first (meth)acrylate monomer having the structural formula:

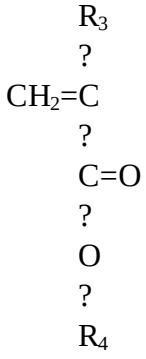


wherein:

each R_1 is independently H or CH_3; and

each R_2 is independently selected from (C_{16}-C_{24})alkyl;

from about 5 parts by weight to about 85 parts by weight of a second (meth)acrylate monomer having the structural formula:



wherein:

each R_3 is independently H or CH_3; and

each R_4 is independently selected from (C_7-C_{15})alkyl; and

from about 5 parts by weight to about 50 parts by weight of a styrenic monomer; and

polymerizing from about 2 parts by weight to about 20 parts by weight additional (meth)acrylate monomer per 100 parts by weight of the combined first and second (meth)acrylate monomers of the monomer mixture, said additional (meth)acrylate monomer consisting essentially of the first (meth)acrylate monomer, the second (meth)acrylate monomer or a mixture thereof, in the presence of the polymerization intermediate, provided that the combined monomers of the monomer mixture and the additional monomer comprise from about 5 weight percent to about 70 weight percent of the first

(meth)acrylate monomer, from about 5 weight percent to about 85 weight percent of the second (meth)acrylate monomer and from about 5 weight percent to about 50 weight percent of the styrenic monomer, to provide a solution of from about 30 weight percent to about 90 weight percent of a viscosity index improving copolymer in the diluent, said solution including less than or equal to 1000 parts by weight residual styrene monomer per one million parts by weight solution.

8. A viscosity index improving copolymer solution made by the method of claim 1.

The appealed claims as represented by claims 1 and 8[2] are drawn to a method for making a viscosity index improving copolymer solution comprising at least (1) polymerizing a monomer mixture in an oil soluble diluent and in the presence of a polymerization initiator to form a polymerization intermediate, wherein the monomer mixture comprises at least a first (meth)acrylate monomer with an alcohol moiety independently selected from (C_{16}-C_{24})alkyl, a second (meth)acrylate monomer with an alcohol moiety independently selected from (C_7-C_{15})alkyl and a styrenic monomer in the amounts specified; and (2) polymerizing, in the presence of the polymerization intermediate, additional (meth)acrylate monomer consisting essentially of the first or second (meth)acrylate monomer or a mixture thereof, in the amounts indicated. The viscosity index improving copolymer solution so prepared is specified in claim 1 to contain about 30 weight percent to about 90 weight percent of the copolymer in the diluent, and to include less than or equal to 1000 parts by weight residual styrene monomer per one million parts by weight solution. The viscosity index improving copolymer solution characterized by the method specified in claim 1 is encompassed by claim 8. According to appellant, "current environmental and health concerns dictate that the amount of residual styrenic monomer present in any commercial embodiment of the copolymer be reduced to a level below 1000 parts per million" (specification, page 1).

The references relied on by the examiner are:

Jarvis et al. (Jarvis)	4,933,400	Jun. 12, 1990
Suzuki et al. (Suzuki)[3]	59-20715	May 15, 1984

[2] Appellant, in the brief (page 3), has grouped process claims 1 and 4 through 7 and product claims 8 through 10, which groups of claims have been separately rejected by the examiner. Thus, we select claims 1 and 8 on which to decide this appeal. 37 CFR § 1.192(c)(7) (1995).

[3] We refer in our opinion to the translation of Suzuki submitted by appellant in the information disclosure statement of July 22, 1994 (Paper No. 7).

(published Japanese Pat. Bulletin)

The examiner has rejected claims 1 and 4 through 7 under 35 U.S.C. § 103 as being unpatentable over Jarvis in view of Suzuki (answer, pages 3-4) and claims 8 through 10 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103 as obvious over Suzuki (answer, pages 4-5).

We affirm the ground of rejection of claims 8 through 10 but reverse the ground of rejection of claims 1 and 4 through 7. Accordingly, the decision of the examiner is affirmed-in-part.

Opinion

We have carefully considered the record before us,[4] and based thereon, find that we cannot sustain the rejection of the appealed claim 1 under § 103 advanced by the examiner on appeal. It is well settled that in order to establish a *prima facie* case of obviousness, "[b]oth the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure." *In re Dow Chemical Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531(Fed. Cir. 1988). Thus, a *prima facie* case of obviousness can be established by showing that some objective teaching or suggestion in the applied prior art taken as a whole and/or knowledge generally available to one of ordinary skill in the art would have led that person to the claimed invention as a whole, including each and every limitation of the claims, without recourse to the teachings in appellant's disclosure. *See generally In re Rouffet*, 149 F.3d 1350, 1358, 47 USPQ2d 1453, 1458 (Fed. Cir. 1998); *Pro-Mold and Tool Co. v. Great Lakes Plastics, Inc.*, 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1629-30 (Fed. Cir. 1996); *In re Oetiker*, 977 F.2d 1443, 1447-48, 24 USPQ2d 1443, 1446-47 (Fed. Cir. 1992) (Nies, J., concurring); *In re Fine*, 837 F.2d 1071, 1074-76, 5 USPQ2d 1596, 1598-1600 (Fed. Cir. 1988); *Dow Chemical, supra*.

Appellant submits that, in the absence of his disclosure, one of ordinary skill in this art would not have found in the combined teachings of Jarvis and Suzuki a suggestion of the claimed process encompassed by claim 1 because in the process of Jarvis,[5] the diluent of the reaction mixture is removed

[4] Rather than reiterate the respective positions advanced by the examiner and appellant, we refer to the examiner's answer and to appellant's brief for a complete exposition thereof.
[5] See, e.g., col. 2, lines 15-33.

from the copolymer product in a devolatilization step and recycled while in the process of Suzuki,[6] the diluent employed in the reaction mixture is retained as part of the viscosity index improver product (brief, page 7).[7] The examiner, in response, contends that the "product of Jarvis, prior to the stripping step, would comprise a 'copolymer solution,'" which is taught by Suzuki, and that claim 1, in view of the transitional term "comprising," does not exclude processes containing "a stripping step as taught by Jarvis" (answer, page 7).

We have carefully considered the teachings of Jarvis and find that, contrary to the examiner's first position, there is no teaching in this reference which would have explicitly or implicitly suggested to one of ordinary skill in this art to stop the *continuous* process taught therein prior to the step of devolatilizing or stripping the diluent from the copolymer and collect a "copolymer solution" and one of ordinary skill in this art would not have found in Suzuki's *single step* process for producing a solution of polymer and diluent to be used as such a suggestion to so modify the process of Jarvis. Indeed, Jarvis teaches "to strip nearly all of the solvent" for recycling such that the "finished polymer . . .typically has . . . less than about 1.0 weight percent" and can further be finished for "use in plastics fabricating equipment" (col. 7, line 22, to col. 8, line 12). In view of the teachings of Jarvis, we also cannot subscribe to the examiner's second position, because while it is true that, as the examiner points out, claim 1 includes processes that include a stripping step in view of the transitional term "comprising," *see Baxter*, *supra*, the clear language of the claim requires that the "viscosity improving copolymer solution" must have "from about 30 weight percent to about 90 weight percent of a viscosity index improving

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[6] See, e.g., page 3, twelfth sentence, page 4, seventh sentence.

[7] Appellant also contends that the clause "said additional (meth)acrylate monomer consisting essentially of the first (meth)acrylate monomer, the second (meth)acrylate monomer or a mixture thereof" in claim 1 "excludes a process where styrene is included in the comonomers added during the second stage" (brief, page 4), that is, second polymerization step. The difficulty that we have with appellant's position is that it is readily apparent from the plain language of claim 1 that the phrase "consisting essentially of" limits only the "additional (meth)acrylate monomer" added in the second polymerization step. Thus, the transitional term "comprising" would open claim 1 to include processes wherein styrenic monomers are added to the second polymerization step. *See In re Baxter*, 656 F.2d 679, 686-87, 210 USPQ 795, 802-03 (CCPA 1981) ("As long as one of the monomers in the reaction is propylene, any other monomer may be present, because the term 'comprises' permits the *inclusion* of other steps, elements, or materials.").

copolymer in the diluent," that is, the "solution" produced must contain about 10 weight percent of the "oil soluble diluent." We are of the opinion that one of ordinary skill in this art also would not have found in the teachings of Jarvis the explicit or implicit suggestion to decrease the amount of diluent stripped from the copolymer thus forming a solution of the polymer in the diluent for use in that form even in view of the process and product taught in Suzuki.

Accordingly, we must agree with appellant that the only direction to the claimed invention as a whole on the record before us is supplied by appellant's own specification. *Dow Chemical, supra*.

The ground of rejection of claim 8 based on Suzuki alone stands on a different factual footing. The examiner finds that the claimed viscosity index improving copolymer solution, characterized by the method of claim 1, reasonably appears to be identical or substantially identical to the viscosity index improving copolymer solutions taught and disclosed[8] by Suzuki and thus would be anticipated by or obvious over this reference (answer, pages 4-5 and 7-8). Appellant submits that Suzuki does not teach or suggest that the single step method of polymerization taught therein would obtain viscosity index improving copolymer solutions "including less than or equal to 1000 parts by weight residual styrene monomer per one million parts by weight solution," as specified in and obtained with the process of claim 1 on which claim 8 depends (brief, pages 8-10).

We have carefully considered the complete disclosure of Suzuki and agree with appellant that Suzuki does not teach or suggest the limitation on the amount of residual styrenic

[8] The examiner also refers to "reference example 1" of Suzuki in the answer (page 5). We find that while this comparative example (page 6) falls outside of the viscosity index improving copolymer solutions taught by Suzuki because the copolymer contains 18 weight % of methacrylate having alkyl groups of 16 and 18 carbon atoms instead of at least 50 weight percent of such a methacrylate as specified (pages 1 and 2), it nonetheless falls within appealed claim 8 as claim 1 specifies that the "first (meth)acrylate monomer" which has a "(C_{16}-C_{24})alkyl" can range from "about 5 weight percent to about 70 weight percent" of the copolymer. Thus, "reference example 1" disclosed by Suzuki is applicable to claim 8 on the statutory basis set forth in the statement of the rejection even though Suzuki teaches that this viscosity improving copolymer solution is not as effective as the viscosity improving copolymer solution taught therein. *See In re Gurley*, 27 F.3d 551, 553, 31 USPQ2d 1130, 1132 (Fed. Cir. 1994).

monomer specified in claim 8.[9] However, merely establishing that Suzuki does not teach or suggest this limitation does not amount to effective argument, and certainly not evidence, that one of ordinary skill in this art preparing a viscosity index improving copolymer solution following the teachings of Suzuki, including performing the comparative examples thereof, would not have arrived at the claimed viscosity index improving copolymer solutions, particularly when employing styrenic monomers at the lower end of the weight percent and ratio ranges taught and exemplified for this reactant (pages, e.g., 2, 3 and 5-6).

Thus, on this record, we are of the view that the examiner has sustained his burden of establishing that the viscosity index improving copolymer solutions prepared as taught in Suzuki are *prima facie* identical or substantially identical to the viscosity index improving copolymer solutions defined in product-by-process style in appealed claim 8 even though produced by a *different* process, in order to make out a *prima facie* case of anticipation under § 102(b) and of obviousness under § 103, *In re Spada*, 911 F.2d 705, 709, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990); *In re Thorpe*, 777 F.2d 695, 697, 227 USPQ 964, 966 (Fed. Cir. 1985); *In re Best*, 562 F.2d 1252, 1255-56, 195 USPQ 430, 433-34 (CCPA 1977); *In re Wertheim*, 541 F.2d 257, 271, 191 USPQ 90, 103-04 (CCPA 1976), even though the process of product-by-process claim 8 presented in claim 1 has been held to be nonobvious over the combined teachings of Suzuki and Jarvis. *See Wertheim*, *supra*.

Having again carefully reconsidered all of the evidence of anticipation and non-anticipation and of obviousness and non-obviousness, *see generally Oetiker*, 977 F.2d at 1445, 24 USPQ2d at 1444; *Spada*, 911 F.2d at 708**,** 15 USPQ2d at 1657, we find that appellant has not carried his burden of establishing by effective argument and/or objective evidence that the claimed invention patentably distinguishes over the teachings of Suzuki. *Spada*, *supra; Best*, *supra*. Indeed, appellant has done no

[9] We noted above that appellant sets forth in his specification that "current environmental and health concerns dictate that the amount of residual styrenic monomer present in any commercial embodiment of the copolymer be reduced to a level below 1000 parts per million" (page 1). We find no evidence in the record which establishes whether the limitation on the amount of residual styrenic monomer in the copolymer originated with appellant in reaction to such "concerns," was suggested by others or dictated by regulation. *See In re Nomiya*, 509 F.2d 566, 574, 184 USPQ 607, 613 (CCPA 1975) ("The

more than provide unsupported allegations of a difference in the amount of residual styrenic monomer remaining in the viscosity index improving copolymer solutions prepared as taught in Suzuki. *In re Payne*, 606 F.2d 303, 315, 203 USPQ 245, 256 (CCPA 1979); *In re Greenfield*, 571 F.2d 1185, 1188-89, 197 USPQ 227, 229-30 (CCPA 1978). Accordingly, based on our consideration of the totality of the record before us, we have weighed the evidence of anticipation and of obviousness found in Suzuki with appellants' countervailing evidence of and argument for non-anticipation and for nonobviousness and conclude that the claimed invention encompassed by appealed claims 8 through 10 are anticipated as a matter of fact under 35 U.S.C. § 102(b) and would have been obvious as a matter of law under 35 U.S.C. § 103.

The examiner's decision is affirmed-in-part.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a).

AFFIRMED-IN-PART

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significance of evidence that a problem was known in the prior art is, of course, that knowledge of a

JOHN D. SMITH	)	
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CHARLES F. WARREN	)	BOARD OF PATENT
Administrative Patent Judge	)	APPEALS AND
	)	INTERFERENCES
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THOMAS A. WALTZ	)	
Administrative Patent Judge	)	

problem provides a reason or motivation for workers in the art to apply their skill to its solution.").

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